IN THE CLAIMS

1. (Currently Amended) A method of determining beam quality (BQ) of a laser beam, comprising:

determining a first measured value of the laser beam based on the power of a first portion of the laser beam;

determining a second measured value of the laser beam based on the power of a second portion of the laser beam;

calculating a normalized measured value by comparing the second measured value to the first measured value;

providing a reference value from a theoretical Gaussian laser beam;

~~determining, for the laser beam, a measured value corresponding to the reference; and~~

calculating beam quality of the laser beam by comparing the normalized measured value with the reference value ~~to obtain the beam quality of the laser beam~~; and

storing data related to the calculated beam quality in a storage medium.

2. (Original) The method of Claim 1, wherein the reference value is approximately $1-e^{-2}$.

3. (Cancelled).

4. (Currently Amended) The method of Claim 1, wherein ~~the~~ determining the second measured value comprises measuring the power from the laser beam through an opening having a first diameter corresponding to twice the far-field waist size ω_f of Gaussian laser beam.

LAW OFFICES OF
MACPHERSON KWOK CHEN &
HEID LLP
18200 Von Karman, Suite 725
IRVINE CA 92612
(949) 752-7040
FAX (408) 392-9262

5. (Currently Amended) The method of Claim 4, ~~further comprising~~ wherein calculating a normalized measured value comprises normalizing the measured power of the laser beam.

6. (Currently Amended) The method of Claim 5, wherein determining the first measured value comprises measuring the power from the laser beam without an opening, and wherein ~~the~~ normalizing the measured power comprises dividing the measured power of the laser through the opening by a the measured power of the laser beam without an opening.

7. (Currently Amended) The method of Claim 1, wherein ~~the~~ determining comprises:

measuring power from the laser beam through a plurality of openings having different diameters ~~different than the first diameter~~;

normalizing the measured powers; and

determining the second measured value from the normalized measured powers.

8. (Original) The method of Claim 7, wherein the number of measured powers is at least three.

9. (Currently Amended) The method of Claim 1, wherein the second measured value is measured approximately one focal length away from a transform lens.

10. (Currently Amended) The method of Claim 1, wherein ~~the~~ comparing the normalized measured value with the reference value comprises calculating the square root of the reference value divided by the normalized measured value.

LAW OFFICES OF
MACPHERSON KWOK CHEN &
HEID LLP
18300 Von Karman, Suite 735
IRVINE CA 92612
(949) 752-7040
FAX (408) 392-9262

11. (Currently Amended) The method of Claim 1, wherein the second measured value corresponds to twice a square root of the second moment of intensity of the laser beam.

12. (Currently Amended) The method of Claim 1, wherein the laser beam ~~can be~~ comprises at least two different types of laser beams.

13. (Currently Amended) The method of Claim 12, wherein the different types of laser beams comprises at least two of Gaussian, top hat, super Gaussian, transverse modes, and combinations of transverse modes.

14. (Currently Amended) The method of Claim 1, wherein the laser beam ~~may be~~ is selected from ~~by all~~ different types of laser beams including at least one of Gaussian, top hat, super Gaussian, transverse modes, and combinations of transverse modes.

15-26. (Cancelled).

27. (Currently Amended) A machine-readable medium storing instructions executable by a processor for determining a measure of quality of a laser beam, the instructions having operations comprising:

splitting the laser beam into a first test beam and a second test beam;

determining a first measured value based on the power of the first test beam;

determining a second measured value based on the power of the second test beam;

calculating a normalized measured value by comparing the second measured value to the first measured value;

providing a reference value from a theoretical Gaussian laser beam;

~~determining, for a test laser beam, a measured value corresponding to the reference; and~~

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calculating beam quality of the laser beam by comparing the normalized measured value with the reference value ~~to obtain the beam quality of the test laser beam;~~ and

storing data related to the calculated beam quality in a storage medium.

28. (Original) The medium of Claim 27, wherein the reference value is approximately $1-e^{-2}$.

29. (Currently Amended) The medium of Claim 27, wherein the ~~test~~ laser beam ~~can be~~ comprises at least two different types of laser beams.

30. (New) The method of Claim 1, further comprising splitting the laser beam into a first test beam and a second test beam.

31. (New) The method of Claim 30, wherein the first portion of the laser beam comprises the first test beam, and wherein determining the first measured value is based on the power of the first test beam.

32. (New) The method of Claim 30, wherein the second portion of the laser beam comprises the second test beam, and wherein determining the second measured value is based on the power of the second test beam.

33. (New) The method of Claim 1, wherein comparing the second measured value to the first measured value comprises dividing the second measured value by the first measured value.

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IRVINE CA 92612
(949) 752-7040
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